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# Matrix-assisted laser desorption/ionization time of flight, MALDI-TOF, mass spectrometry for identification of fish pathogenic bacteria

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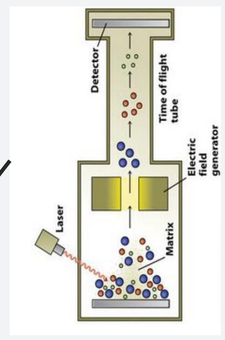
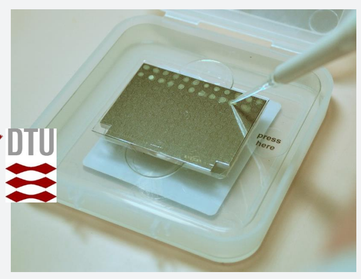
## Conclusions

MALDI-TOF is a new useful, fast and cheap technology used in human diagnostics, also able to identify important fish pathogenic bacteria as *Flavobacterium columnare*, *F. psychrophilum*, *Vibrio anguillarum*, *V.vulnificus*, and *Yersinia ruckeri*. The technique has great potential to be improved and explored to identify also other important bacteria in aquaculture.



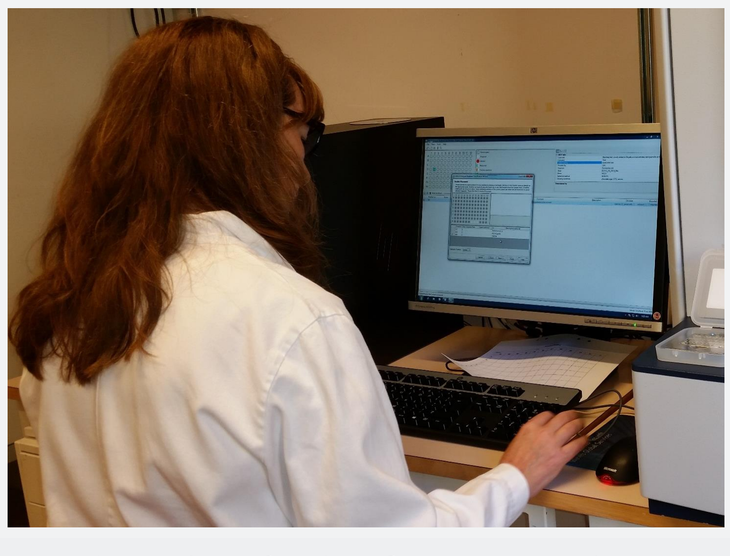

1. One fresh colony is picked from the agar…

2…and placed on the MALDi target plate




3…matrix solution is added, let to dry …


4. …the MALDi target plate is inserted into the MALDI-TOF mass spectrometer for exposure to the laser beam…..



5. …the obtained spectrum is compared with spectra in a database…..

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Analyte Name: Fp10
Analyte Description: D:\Data\MSP\FSK\F psychrophilum\Fp10\Fp10\0_G10\2\1SLin
Analyte ID: 81f82082-8d02-4f9e-926d-cf913646b07a
Analyte Creation Date/Time: 12/3/2013 8:59:43 AM
Applied MSP Library(ies):
Applied Taxonomy Tree: Bruker Taxonomy

| Rank (Quality) | Matched Pattern | Score Value | NCBI Identifier |
|---|---|---|---|
| 1 (+++) | Flavobacterium psychrophilum F6 | 2.733 | 124429064 |
| 2 (+++) | Flavobacterium psycrophilum SVA F500 | 2.47 | 124429064 |
| 3 (+++) | Flavobacterium psychrophilum F497 | 2.466 | 124429064 |
| 4 (+++) | Flavobacterium psychrophilum CCUG35200 | 2.412 | 124429064 |
| 5 (+++) | Flavobacterium psychrophilum F511 | 2.396 | 124429064 |

6. Similarity with the spectra in the database, given a score above 2.3 is classified as a good identification to bacterial species level.

More detailed information about the evaluation of MALDI- TOF for fish pathogens can be found here:

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